

AMENDMENT OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A method for inducing stem cells to differentiate into neuronal cells comprising:
 - a) culturing said stem cells with basic fibroblast growth factor;
 - b) culturing the cells of step a) with fibroblast growth factor 8 and Sonic Hedgehog;
 - c) culturing the cells of step b) with brain-derived neurotrophic factor;
 - d) co-culturing the cells of step c) with astrocytes.
2. (Currently Amended) The method of claim 1, wherein the co-culture of step d) is performed in the presence of a supplement comprising insulin, ~~transferrin~~ transferrin, selenite, putrescine and progesterone.
3. (Currently Amended) The method of claim 1, wherein the co-culture of step d) is performed in the presence of N2 ~~supplement~~ supplement.
4. (Original) The method of claim 1, wherein said cells are cultured according to steps (a) through (d) for at least seven days at each step.
5. (Original) The method of claim 1, wherein the stem cells are mammalian stem cells.
6. (Original) The method of claim 1, wherein the stem cells are human stem cells.
7. (Currently Amended) The method of claim 1, wherein the stem cells are selected from the group consisting of neural stem cells, ~~multipotent adult progenitor cells (MPACs)~~, embryonic germ cells, and embryonic stem cells, and cells that are not embryonic stem cells, embryonic germ cells, or germ cells, and can differentiate into at least one cell type of each of the endodermal, ectodermal, and mesodermal embryonic lineages.

8. (Currently Amended) The method of claim 1, wherein the stem cells are MAPCs not embryonic germ cells, embryonic stem cells or germ cells, and can differentiate into at least one cell type of each of the endodermal, ectodermal, and mesodermal embryonic lineages.

9. (Original) The method of claim 1, wherein the stem cells are isolated from bone marrow, placenta, muscle, brain, spinal cord, blood, and skin.

10. (Original) The method of claim 1, wherein the stem cells are isolated from bone marrow.

11. (Original) The method of claim 1, wherein said neuronal cells are selected from the group consisting of dopaminergic neurons, serotonergic neurons, GABA-ergic neurons and combinations thereof.

13. (Original) A method for inducing cells to differentiate into neuronal cells comprising co-culturing the cells with astrocytes, said cells having gone through the steps of:

- a) culturing stem cells with basic fibroblast growth factor;
- b) culturing the cells of step a) with fibroblast growth factor 8 and Sonic Hedgehog;
- c) culturing the cells of step b) with brain-derived neurotrophic factor.